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AMENDMENTS TO THE CLAIMS

1. and 2. (cancelled)

3. (currently amended) A method of claim [[2]] 21 wherein Z¹ and Z² are each R⁷-phenyl.

4. (previously presented) A method of claim 3 wherein R⁷ is selected from the group consisting of (C₁-C₆)alkyl and halo.

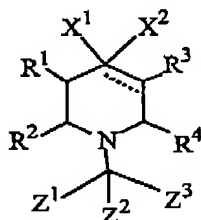
5. and 6. (canceled)

7. (currently amended) A method of claim [[19]] 21 wherein X¹ is R⁷-aryl and [[and]] X² is OH or [[-NC(O)R²¹]] -NHC(O)R²¹.

8. (previously presented) A method of claim 7 wherein X¹ is R⁷-phenyl.

9. and 20. (canceled)

21. (new) A method of treating cough comprising administering a combination of an effective amount of an ORL-1 agonist of the formula



or a pharmaceutically acceptable salt or solvate thereof, wherein:

the dotted line represents an optional double bond;

X¹ is R⁵-(C₁-C₁₂)alkyl, R⁶-(C₃-C₁₂)cycloalkyl, R⁷-aryl, R⁸-heteroaryl or R¹⁰-(C₃-C₇)heterocycloalkyl;

X² is -CHO, -CN, -NHC(=NR²⁶)NHR²⁶, -CH(=NOR²⁶), -NHR²⁶, R⁷-aryl, R⁷-aryl(C₁-C₆)alkyl, R⁷-aryl(C₁-C₆)alkenyl, R⁷-aryl(C₁-C₆)alkynyl, -(CH₂)_vOR¹³, -(CH₂)_vCOOR²⁷, -(CH₂)_vCONR¹⁴R¹⁵, -(CH₂)_vNR²¹R²² or -(CH₂)_vNHC(O)R²¹,

wherein v is zero, 1, 2 or 3 and wherein q is 1 to 3 and a is 1 or 2;

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R¹ and R³ are each hydrogen;

R² and R⁴ together form an alkylene bridge of 1 to 3 carbon atoms;

R⁵ is 1 to 3 substituents independently selected from the group consisting of H, R⁷-aryl, R⁶-(C₃-C₁₂)cycloalkyl, R⁸-heteroaryl, R¹⁰-(C₃-C₇)heterocycloalkyl, -NR¹⁹R²⁰, -OR¹³ and -S(O)₀₋₂R¹³;

R⁶ is 1 to 3 substituents independently selected from the group consisting of H, (C₁-C₆)alkyl, R⁷-aryl, -NR¹⁹R²⁰, -OR¹³ and -SR¹³;

R⁷ is 1 to 3 substituents independently selected from the group consisting of hydrogen, halo, (C₁-C₆)alkyl, R²⁵-aryl, (C₃-C₁₂)cycloalkyl, -CN, -CF₃, -OR¹⁹, -(C₁-C₆)alkyl-OR¹⁹, -OCF₃, -NR¹⁹R²⁰, -(C₁-C₆)alkyl-NR¹⁹R²⁰, -NHSO₂R¹⁹, -SO₂N(R²⁶)₂, -SO₂R¹⁹, -SOR¹⁹, -SR¹⁹, -NO₂, -CONR¹⁹R²⁰, -NR²⁰COR¹⁹, -COR¹⁹, -COCF₃, -OCOR¹⁹, -OCO₂R¹⁹, -COOR¹⁹, -(C₁-C₆)alkyl-NHCOOC(CH₃)₃, -(C₁-C₆)alkyl-NHCOCF₃, -(C₁-C₆)alkyl-NHSO₂-(C₁-C₆)alkyl, -(C₁-C₆)alkyl-

NHCONH-(C₁-C₆)alkyl or $-(CH_2)_f-N \begin{array}{c} \diagup \diagdown \\ | \quad | \\ \text{---} \end{array} N-R^{19}$, wherein f is 0 to 6; or R⁷ substituents on adjacent ring carbon atoms may together form a methylenedioxy or ethylenedioxy ring;

R⁸ is 1 to 3 substituents independently selected from the group consisting of hydrogen, halo, (C₁-C₆)alkyl, R²⁵-aryl, (C₃-C₁₂)cycloalkyl, -CN, -CF₃, -OR¹⁹, -(C₁-C₆)alkyl-OR¹⁹, -OCF₃, -NR¹⁹R²⁰, -(C₁-C₆)alkyl-NR¹⁹R²⁰, -NHSO₂R¹⁹, -SO₂N(R²⁶)₂, -NO₂, -CONR¹⁹R²⁰, -NR²⁰COR¹⁹, -COR¹⁹, -OCOR¹⁹, -OCO₂R¹⁹ and -COOR¹⁹;

R⁹ is hydrogen, (C₁-C₆)alkyl, halo, -OR¹⁹, -NR¹⁹R²⁰, -NHCN, -SR¹⁹ or -(C₁-C₆)alkyl-NR¹⁹R²⁰;

R¹⁰ is H, (C₁-C₆)alkyl, -OR¹⁹, -(C₁-C₆)alkyl-OR¹⁹, -NR¹⁹R²⁰ or -(C₁-C₆)alkyl-NR¹⁹R²⁰;

R¹³ is H, (C₁-C₆)alkyl, R⁷-aryl, -(C₁-C₆)alkyl-OR¹⁹, -(C₁-C₆)alkyl-NR¹⁹R²⁰ or -(C₁-C₆)alkyl-SR¹⁹;

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R¹⁴ and R¹⁵ are independently selected from the group consisting of H, R⁵-

(C₁-C₆)alkyl, R⁷-aryl and $-(\text{CH}_2)_q-\text{C}(=\text{O})-\text{N}(\text{C}_5\text{H}_9)_a$, wherein q and a are as defined above;

R¹⁹ and R²⁰ are independently selected from the group consisting of hydrogen, (C₁-C₆)alkyl, (C₃-C₁₂)cycloalkyl, aryl and aryl(C₁-C₆)alkyl;

R²¹ and R²² are independently selected from the group consisting of hydrogen, (C₁-C₆)alkyl, (C₃-C₁₂)cycloalkyl, (C₃-C₁₂)cycloalkyl(C₁-C₆)alkyl, (C₃-C₇)heterocycloalkyl, -(C₁-C₆)alkyl(C₃-C₇)heterocycloalkyl, R⁷-aryl, R⁷-aryl(C₁-C₆)alkyl, R⁸-heteroaryl(C₁-C₁₂)alkyl, -(C₁-C₆)alkyl-OR¹⁹, -(C₁-C₆)alkyl-NR¹⁹R²⁰, -(C₁-C₆)alkyl-SR¹⁹, -(C₁-C₆)alkyl-NR¹⁸-(C₁-C₆)alkyl-O-(C₁-C₆)alkyl and -(C₁-C₆)alkyl-NR¹⁸-(C₁-C₆)alkyl-NR¹⁸-(C₁-C₆)alkyl;

R¹⁸ is hydrogen or (C₁-C₆)alkyl;

Z¹ is R⁷-aryl; Z² is R⁷-aryl; Z³ is hydrogen or (C₁-C₆)alkyl;

R²⁵ is 1-3 substituents independently selected from the group consisting of H, (C₁-C₆)alkyl, (C₁-C₆)alkoxy and halo;

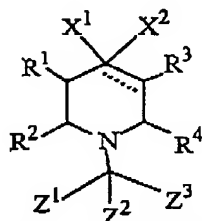
R²⁶ is independently selected from the group consisting of H, (C₁-C₆)alkyl and R²⁵-C₆H₄-CH₂-;

R²⁷ is H, (C₁-C₆)alkyl, R⁷-aryl(C₁-C₆)alkyl, or (C₃-C₁₂)cycloalkyl;

and an effective amount of second agent for treating cough, allergy or asthma symptoms selected from the group consisting of: antihistamines, 5-lipoxygenase inhibitors, leukotriene inhibitors, H₃ inhibitors, β-adrenergic receptor agonists, xanthine derivatives, α-adrenergic receptor agonists, mast cell stabilizers, anti-tussives, expectorants, NK₁, NK₂ and NK₃ tachykinin receptor antagonists, and GABA_B agonists.

22. (new) A pharmaceutical composition comprising: a therapeutically effective amount of a nociceptin receptor ORL-1 agonist of the formula

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or a pharmaceutically acceptable salt or solvate thereof, wherein:

the dotted line represents an optional double bond;

X¹ is R⁵-(C₁-C₁₂)alkyl, R⁶-(C₃-C₁₂)cycloalkyl, R⁷-aryl, R⁸-heteroaryl or R¹⁰-(C₃-C₇)heterocycloalkyl;

X² is -CHO, -CN, -NHC(=NR²⁶)NHR²⁶, -CH(=NOR²⁶), -NHR²⁶, R⁷-aryl, R⁷-aryl(C₁-C₆)alkyl, R⁷-aryl(C₁-C₆)alkenyl, R⁷-aryl(C₁-C₆)alkynyl, -(CH₂)_vOR¹³, -(CH₂)_vCOOR²⁷, -(CH₂)_vCONR¹⁴R¹⁵, -(CH₂)_vNR²¹R²² or -(CH₂)_vNHC(O)R²¹, wherein v is zero, 1, 2 or 3 and wherein q is 1 to 3 and a is 1 or 2;

R¹ and R³ are each hydrogen;

R² and R⁴ together form an alkylene bridge of 1 to 3 carbon atoms;

R⁵ is 1 to 3 substituents independently selected from the group consisting of H, R⁷-aryl, R⁶-(C₃-C₁₂)cycloalkyl, R⁸-heteroaryl, R¹⁰-(C₃-C₇)heterocycloalkyl, -NR¹⁹R²⁰, -OR¹³ and -S(O)₀₋₂R¹³;

R⁶ is 1 to 3 substituents independently selected from the group consisting of H, (C₁-C₆)alkyl, R⁷-aryl, -NR¹⁹R²⁰, -OR¹³ and -SR¹³;

R⁷ is 1 to 3 substituents independently selected from the group consisting of hydrogen, halo, (C₁-C₆)alkyl, R²⁵-aryl, (C₃-C₁₂)cycloalkyl, -CN, -CF₃, -OR¹⁹, -(C₁-C₆)alkyl-OR¹⁹, -OCF₃, -NR¹⁹R²⁰, -(C₁-C₆)alkyl-NR¹⁹R²⁰, -NHSO₂R¹⁹, -SO₂N(R²⁶)₂, -SO₂R¹⁹, -SOR¹⁹, -SR¹⁹, -NO₂, -CONR¹⁹R²⁰, -NR²⁰COR¹⁹, -COR¹⁹, -COCF₃, -OCOR¹⁹, -OCO₂R¹⁹, -COOR¹⁹, -(C₁-C₆)alkyl-NHCOOC(CH₃)₃, -(C₁-C₆)alkyl-NHCOCF₃, -(C₁-C₆)alkyl-NHSO₂-(C₁-C₆)alkyl, -(C₁-C₆)alkyl-

NHCONH-(C₁-C₆)alkyl or -(CH₂)_f-N_{1,4}-R¹⁹, wherein f is 0 to 6; or R⁷

substituents on adjacent ring carbon atoms may together form a methylenedioxy or ethylenedioxy ring;

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R⁸ is 1 to 3 substituents independently selected from the group consisting of hydrogen, halo, (C₁-C₆)alkyl, R²⁵-aryl, (C₃-C₁₂)cycloalkyl, -CN, -CF₃, -OR¹⁹, -(C₁-C₆)alkyl-OR¹⁹, -OCF₃, -NR¹⁹R²⁰, -(C₁-C₆)alkyl-NR¹⁹R²⁰, -NHSO₂R¹⁹, -SO₂N(R²⁶)₂, -NO₂, -CONR¹⁹R²⁰, -NR²⁰COR¹⁹, -COR¹⁹, -OCOR¹⁹, -OCO₂R¹⁹ and -COOR¹⁹;

R⁹ is hydrogen, (C₁-C₆)alkyl, halo, -OR¹⁹, -NR¹⁹R²⁰, -NHCN, -SR¹⁹ or -(C₁-C₆)alkyl-NR¹⁹R²⁰;

R¹⁰ is H, (C₁-C₆)alkyl, -OR¹⁹, -(C₁-C₆)alkyl-OR¹⁹, -NR¹⁹R²⁰ or -(C₁-C₆)alkyl-NR¹⁹R²⁰;

R¹³ is H, (C₁-C₆)alkyl, R⁷-aryl, -(C₁-C₆)alkyl-OR¹⁹, -(C₁-C₆)alkyl-NR¹⁹R²⁰ or -(C₁-C₆)alkyl-SR¹⁹;

R¹⁴ and R¹⁵ are independently selected from the group consisting of H, R⁵.

(C₁-C₆)alkyl, R⁷-aryl and $-(\text{CH}_2)_q-\overset{\text{O}}{\underset{\text{O}}{\text{C}}}-\text{N} \begin{array}{c} \diagup \diagdown \\ \diagdown \diagup \end{array} \text{a}$, wherein q and a are as defined above;

R¹⁹ and R²⁰ are independently selected from the group consisting of hydrogen, (C₁-C₆)alkyl, (C₃-C₁₂)cycloalkyl, aryl and aryl(C₁-C₆)alkyl;

R²¹ and R²² are independently selected from the group consisting of hydrogen, (C₁-C₆)alkyl, (C₃-C₁₂)cycloalkyl, (C₃-C₁₂)cycloalkyl(C₁-C₆)alkyl, (C₃-C₇)heterocycloalkyl, -(C₁-C₆)alkyl(C₃-C₇)-heterocycloalkyl, R⁷-aryl, R⁷-aryl(C₁-C₆)alkyl, R⁸-heteroaryl(C₁-C₁₂)alkyl, -(C₁-C₆)alkyl-OR¹⁹, -(C₁-C₆)alkyl-NR¹⁹R²⁰, -(C₁-C₆)alkyl-SR¹⁹, -(C₁-C₆)alkyl-NR¹⁸-(C₁-C₆)alkyl-O-(C₁-C₆)alkyl and -(C₁-C₆)alkyl-NR¹⁸-(C₁-C₆)alkyl-NR¹⁸-(C₁-C₆)alkyl;

R¹⁸ is hydrogen or (C₁-C₆)alkyl;

Z¹ is R⁷-aryl; Z² is R⁷-aryl; Z³ is hydrogen or (C₁-C₆)alkyl;

R²⁵ is 1-3 substituents independently selected from the group consisting of H, (C₁-C₆)alkyl, (C₁-C₆)alkoxy and halo;

R²⁶ is independently selected from the group consisting of H, (C₁-C₆)alkyl and R²⁵-C₆H₄-CH₂-;

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R²⁷ is H, (C₁-C₆)alkyl, R⁷-aryl(C₁-C₆)alkyl, or (C₃-C₁₂)cycloalkyl; and a therapeutically effective amount of a second agent selected from the group consisting of: antihistamines, 5-lipoxygenase inhibitors, leukotriene inhibitors, H₃ inhibitors, β -adrenergic receptor agonists, xanthine derivatives, α -adrenergic receptor agonists, mast cell stabilizers, anti-tussives, expectorants, NK₁, NK₂ and NK₃ tachykinin receptor antagonists, and GABA_B agonists; and a pharmaceutically acceptable carrier.

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